Claims

What is claimed is:

1. A cutter tool for a wellbore casing comprising :

a rotatable tubular support;

at least one cutter blade supported on the rotatable tubular support, having a retracted position for insertion into the wellbore casing and having an expanded position for cutting engagement with the wellbore casing ; and

an actuator for moving the cutter blade from the retracted position to the expanded position for cutting engagement with the wellbore casing .

2. The cutter tool of claim 1, further comprising an expander device coupled to the actuator and wherein the cutter blade is pivotably mounted on the expander device.

3. The cutter tool of claim 2, wherein the cutter blade includes an interior sliding surface and the expander device includes a ramp surface moveable by the actuator along the tubular support in sliding engagement with the interior sliding surface of the cutter blade to pivot the cutter blade between the retracted position and the expanded position.

4. The cutter tool of claim 3, wherein the at least one cutter blade includes a plurality of cutter blades each pivotably mounted on the expander device and each having an interior sliding surface and wherein the expander device comprises an expander cone supported on a mandrel portion of the tubular support and having a plurality of ramp surfaces slidingly engaged with each interior sliding surface of the plurality of cutter blades.

5. The cutter tool of claim 4, wherein the actuator for moving the cutter device from the retracted position to the expanded position further comprises an activation device for selectively activating the actuator to move the cutter blade from the retracted position to the expanded position for cutting engagement with the wellbore casing.

6. The cutter tool of claim 5, wherein the actuator comprises a hydraulic cylinder attached to the tubular support and coupled to the expander device and wherein the activation device comprises an activation dart seatable in the tubular support for directing fluidic material into the hydraulic cylinder to cause relative sliding movement of the expander cone on the mandrel portion of the tubular support.

7. The cutter tool of claim 4, wherein the actuator for moving the cutter device from the retracted

position to the expanded position further comprises means for selectively activating the actuator to move the cutter blades from the retracted position to the expanded position for cutting engagement with the wellbore casing and from the expanded position to the retracted position.

8. The cutter tool of claim 7, wherein the actuator comprises a hydraulic cylinder attached to the tubular support and coupled to the expander device, the hydraulic cylinder having an opening chamber for moving the cone in an axial direction for expanding the cutter blades and having a closing cylinder for moving the expander cone in an opposite axial direction for retracting the cutter blade and wherein the activation device comprises a first activation dart seatable in the tubular support for directing fluidic material into the opening chamber of the hydraulic cylinder and a second activation dart seatable in the tubular support for directing fluidic material into the closing chamber of the hydraulic cylinder.

9. The cutter tool of claim 4, wherein the expander cone has a plurality of first cam arms each providing one of the plurality of ramp surfaces and slidingly engaged with a separate one of the plurality of cutter blades and further comprising a second cone having a plurality of cam second arms each having a second ramp surface and interleaved with the first cam arms and a plurality of dummy blades interleaved with the plurality of cutter blades and in sliding engagement with the second ramp surfaces provided on the second cam arms, the dummy blades expandable and retractable with the cutter blades and having insufficient thickness to contact the wellbore casing when expanded.

10. The cutter tool of claim 1, wherein the cutter blade further comprises a cutting tip secured to the cutter blade projecting radially outward when the cutter blade is in the expanded position for cutting engagement between the cutting tip and the wellbore casing .

11. A casing cutting tool comprising :

an upper cam assembly comprising:

a tubular base; and

a plurality of cam arms extending from the tubular base in a downward longitudinal direction, each cam arm defining an inclined surface;

a plurality of upper cutting blade segments interleaved with the cam arms of the upper cam assembly and pivotally coupled to the upper tubular support member;

a lower cam assembly comprising:

a tubular base; and

a plurality of cam arms extending from the tubular base in an upward longitudinal direction, each cam arm defining an inclined surface that mates with the inclined surface of a corresponding one of the upper cutter blade segments;

wherein the cams arms of the upper cam assembly are interleaved with and overlap the cam arms of the lower cam assembly; and

a plurality of lower dummy segments interleaved with cam arms of the lower cam assembly, each lower dummy segment pivotally coupled to the lower tubular support member and mating with the inclined surface of a corresponding one of the cam arms of the upper cam assembly.

12. A method for cutting a wellbore casing comprising :

providing a plurality of cutter blades supported on a rotatable tubular support;

placing the plurality of cutter blades in a retracted position;

inserting the tubular support into the wellbore casing with the cutter blades supported in the retracted position;

actuating the cutter blades in the well bore to expand into a cutting position engage with the wellbore casing ; and

rotating the tubular support with the cutter blades supported thereon so that the wellbore casing is cut by the rotating cutter blades.

13. A method of radially expanding cutter blades for cutting a wellbore casing in a wellbore, comprising:

supporting the expandable tubular member using a tubular support member and an expandable cutter tool;

injecting a fluidic material into the tubular support member;

actuating the expandable cutter tool radially outwardly relative to the wellbore casing and into cutting engagement with the wellbore casing using the injected fluidic material.

14. The method of claim 13, further comprising:

rotating the expandable cutter tool in cutting engagement with the wellbore casing when the expandable cutter tool is expanded radially outwardly relative to the wellbore casing.

15. The method of claim 14, further comprising:

continuing to rotate the expandable cuter tool in cutting engagement with the wellbore casing until an upper portion of the wellbore casing is severed from the wellbore casing;

maintaining the expandable cutter tool in the radially expanded position after the

upper portion of the wellbore casing is severed; and

raising the expandable cutter tool with the severed casing portion supported thereon out of the wellbore.

16. The method of claim 13, wherein actuating the expandable cutter tool radially outwardly relative to the wellbore casing and into cutting engagement with the wellbore casing using the injected fluidic material, further comprises:

directing the fluidic material from within a portion of the tubular support member to an actuator cylinder to cause the cutting tool to slide axially on ramp surfaces so that cutting blades are moved radially outwardly.

17. The method of claim 13, wherein actuating the expandable cutter tool radially outwardly relative to the wellbore casing and into cutting engagement with the wellbore casing, wherein the tubular support member comprises:

an upper tubular support member and a lower tubular support member; and

wherein actuating the expandable cutter tool comprises displacing the upper tubular member relative to the lower tubular support member.

18. The method of claim 17, wherein the expandable cutting tool comprises:

an upper cam assembly comprising:

a tubular base; and

a plurality of cam arms extending from the tubular base in a downward longitudinal direction, each cam arm defining an inclined surface;

a plurality of upper cutting blade segments interleaved with the cam arms of the upper cam assembly and pivotally coupled to the upper tubular support member;

a lower cam assembly comprising:

a tubular base; and

a plurality of cam arms extending from the tubular base in an upward longitudinal direction, each cam arm defining an inclined surface that mates with the inclined surface of a corresponding one of the upper cutter blade segments;

wherein the cams arms of the upper cam assembly are interleaved with and overlap the cam arms of the lower cam assembly; and

a plurality of lower dummy segments interleaved with cam arms of the lower cam assembly, each lower dummy segment pivotally coupled to the lower

tubular support member and mating with the inclined surface of a corresponding one of the cam arms of the upper cam assembly.